SEQUENCE LISTING

<110> ACE Biosciences A/S

<120> Extracellular fungal polypeptides

<130> P758PC00

<160> 49

<170> PatentIn version 3.1

<210> 1

<211> 260

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:1 - CssI)

<400> 1

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Leu Leu Cys Ser Ala Gly Ala Gly Pro Leu Leu Ile Ile Gln Phe Val
            20                  25                  30

Thr Val Ala Ser Ala Leu Ala Leu Ala Pro Thr Ala Val Val Ala Arg
        35                  40                  45

Gln Gly Ala Ala Ala Phe Val Thr Val Asn Ser Ile Asp Val Cys Pro
    50                  55                  60

Lys Lys Val Ala Gln Glu Ile Ile Asn Pro Gly Pro Lys Val Val Thr
65                  70                  75                  80

Thr Pro Tyr Thr Cys Asp Gln Val Lys Leu Gly His Gly Leu Asp Val
                85                  90                  95
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Ser Tyr Tyr Asn Phe Asp Ile Glu Pro Leu Thr Lys Asp Thr Phe Pro
100 105 110

Tyr Cys Lys Ala Leu Lys Val Phe Asp Asn Glu Gly Cys Leu Gly Phe
115 120 125

Pro Thr Leu Trp Ile Pro Leu Glu Ser Pro Leu Glu Asp Lys Cys Ile
130 135 140

Pro Glu His Tyr Phe Ser Asp Glu Val Lys Ser Ile Ser Phe Gln Leu
145 150 155 160

Asp Cys Arg Glu Asp Ala Pro Val Lys Lys Glu Pro Tyr Gly Pro Lys
165 170 175

Glu Gly Ala Glu Gln Ser Ala Pro Gln Ala Glu His Ser Thr Lys Gln
180 185 190

Asp Ala Gln Gln Gly Ser His Gln Gly Gln Glu Val Gln Asn Ser Pro
195 200 205

Lys Gln Glu Ala Arg Gln Gly Ser Arg Pro Ala Glu Ala Ala Pro Lys
210 215 220

Gln Glu Gln Glu Ala Glu Gln Ala Ser Glu Ala Ala Pro Glu Lys Lys
225 230 235 240

Ala Ser Asn Pro Ala Asp Ser Leu Gly Leu Gly Glu Leu Thr Lys Val
245 250 255

Leu Gly Phe Arg
260

<210> 2

<211> 107

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:2 - hydrophobin)

<400> 2

Val Arg Phe Pro Val Pro Asp Asp Ile Thr Val Lys Gln Ala Thr Glu
1 5 10 15

Lys Cys Gly Asp Gln Ala Gln Leu Ser Cys Cys Asn Lys Ala Thr Tyr
20 25 30

Ala Gly Asp Val Thr Asp Ile Asp Glu Gly Ile Leu Ala Gly Thr Leu
35 40 45

Lys Asn Leu Ile Gly Gly Gly Ser Gly Thr Glu Gly Leu Gly Leu Phe
50 55 60

Asn Gln Cys Ser Lys Leu Asp Leu Gln Ser Pro Ile Ile Gly Ile Pro
65 70 75 80

Ile Gln Asp Leu Val Asn Gln Lys Cys Lys Gln Asn Ile Ala Cys Cys
85 90 95

Gln Asn Ser Pro Ser Asp Ala Val Arg Phe Pro
100 105

<210> 3

<211> 318

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:3 -GAPDH-B)

<400> 3

Met Ala Thr Pro Lys Val Gly Ile Asn Gly Phe Gly Arg Ile Gly Arg
1 5 10 15

Ile Val Gly Leu Asn Ser Leu Ser His Gly Val Asp Val Val Ala Val
20 25 30

Asn Asp Pro Phe Ile Glu Val His Tyr Ala Ala Tyr Met Leu Lys Tyr
35 40 45

Asp Thr Thr His Gly Gln Phe Lys Gly Thr Ile Glu Thr Tyr Asp Gln
50 55 60

Gly Leu Ile Val Asn Gly Lys Lys Ile Arg Phe Tyr Ala Glu Lys Asp
65 70 75 80

Pro Ser Gln Ile Pro Trp Ser Glu Thr Gly Ala Ala Tyr Ile Val Glu

85 90 95

Ser Thr Gly Val Phe Thr Thr Lys Glu Lys Ala Ser Ala His Leu Lys
100 105 110

Gly Gly Ala Lys Lys Val Ile Ile Ser Ala Pro Ser Ala Asp Ala Pro
115 120 125

Met Phe Val Met Gly Val Asn Asn Thr Thr Tyr Thr Ser Asp Ile Gln
130 135 140

Val Leu Ser Asn Ala Ser Cys Thr Thr Asn Cys Leu Ala Pro Leu Ala
145 150 155 160

Lys Val Ile Asn Asp Lys Phe Gly Ile Val Glu Gly Leu Met Thr Thr
165 170 175

Val His Ser Tyr Thr Ala Thr Gln Lys Val Val Asp Ala Pro Ser Asn
180 185 190

Lys Asp Trp Arg Gly Gly Arg Thr Ala Ala Gln Asn Ile Ile Pro Ser
195 200 205

Ser Thr Gly Ala Ala Lys Ala Val Gly Lys Val Ile Pro Ser Leu Asn
210 215 220

Gly Lys Leu Thr Gly Met Ala Met Arg Val Pro Thr Ser Asn Val Ser
225 230 235 240

Val Val Asp Leu Thr Cys Arg Leu Glu Lys Gly Ala Ser Tyr Asp Glu
245 250 255

Ile Lys Gln Ala Ile Lys Ala Ala Ser Glu Glu Gly Glu Leu Lys Asn
260 265 270

Ile Leu Gly Tyr Thr Glu Asp Asp Val Val Ser Ser Asp Leu Asn Gly
275 280 285

Asp Glu Arg Ser Ser Ile Phe Asp Ala Lys Ala Gly Ile Ser Leu Asn
290 295 300

Pro Asn Phe Val Lys Leu Val Ala Trp Tyr Asp Asn Glu Trp
305 310 315

<210> 4

<211> 438

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:4 - enolase)

<400> 4

Met Pro Ile Ser Lys Ile His Ala Arg Ser Val Tyr Asp Ser Arg Gly
1 5 10 15

Asn Pro Thr Val Glu Val Asp Val Ala Thr Glu Thr Gly Leu His Arg
20 25 30

Ala Ile Val Pro Ser Gly Ala Ser Thr Gly Gln His Glu Ala His Glu
35 40 45

Leu Arg Asp Gly Asp Lys Thr Gln Trp Gly Gly Lys Gly Val Leu Lys
50 55 60

Ala Val Lys Asn Val Asn Glu Thr Ile Gly Pro Ala Leu Ile Lys Glu
65 70 75 80

Asn Ile Asp Val Lys Asp Gln Ser Lys Val Asp Glu Phe Leu Asn Lys
85 90 95

Leu Asp Gly Thr Ala Asn Lys Ser Asn Leu Gly Ala Asn Ala Ile Leu
100 105 110

Gly Val Ser Leu Ala Val Ala Lys Ala Gly Ala Ala Glu Lys Gly Val
115 120 125

Pro Leu Tyr Ala His Ile Ser Asp Leu Ala Gly Thr Lys Lys Pro Tyr
130 135 140

Val Leu Pro Val Pro Phe Gln Asn Val Leu Asn Gly Gly Ser His Ala
145 150 155 160

Gly Gly Arg Leu Ala Phe Gln Glu Phe Met Ile Val Pro Asp Ser Ala
165 170 175

Pro Ser Phe Ser Glu Ala Leu Arg Gln Gly Ala Glu Val Tyr Gln Lys
180 185 190

Leu Lys Ala Leu Ala Lys Lys Lys Tyr Gly Gln Ser Ala Gly Asn Val
195 200 205

Gly Asp Glu Gly Gly Val Ala Pro Asp Ile Gln Thr Ala Glu Glu Ala
210 215 220

Leu Asp Leu Ile Thr Glu Ala Ile Glu Gln Ala Gly Tyr Thr Gly Lys
225 230 235 240

Ile Lys Ile Ala Met Asp Val Ala Ser Ser Glu Phe Tyr Lys Ala Asp
245 250 255

Val Lys Lys Tyr Asp Leu Asp Phe Lys Asn Pro Glu Ser Asp Pro Ser
260 265 270

Lys Trp Leu Thr Tyr Glu Gln Leu Ala Asp Leu Tyr Lys Ser Leu Ala
275 280 285

Ala Lys Tyr Pro Ile Val Ser Ile Glu Asp Pro Phe Ala Glu Asp Asp
290 295 300

Trp Glu Ala Trp Ser Tyr Phe Tyr Lys Thr Ser Asp Phe Gln Ile Val
305 310 315 320

Gly Asp Asp Leu Thr Val Thr Asn Pro Gly Arg Ile Lys Lys Ala Ile
325 330 335

Glu Leu Lys Ser Cys Asn Ala Leu Leu Leu Lys Val Asn Gln Ile Gly
340 345 350

Thr Leu Thr Glu Ser Ile Gln Ala Ala Lys Asp Ser Tyr Ala Asp Asn
355 360 365

Trp Gly Val Met Val Ser His Arg Ser Gly Glu Thr Glu Asp Val Thr
370 375 380

Ile Ala Asp Ile Ala Val Gly Leu Arg Ser Gly Gln Ile Lys Thr Gly
385 390 395 400

Ala Pro Cys Arg Ser Glu Arg Leu Ala Lys Leu Asn Gln Ile Leu Arg
405 410 415

Ile Glu Glu Glu Leu Gly Glu Asn Thr Val Tyr Ala Gly Ser Lys Phe
420 425 430

Arg Thr Ala Val Asn Leu
435

<210> 5

<211> 728

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:5 - catalase B)

<400> 5

Met Arg Leu Thr Phe Ile Pro Ser Leu Ile Gly Val Ala Asn Ala Val
1 5 10 15

Cys Pro Tyr Met Thr Gly Glu Leu Asn Arg Arg Asp Glu Ile Ser Asp
20 25 30

Gly Asp Ala Ala Ala Ala Thr Glu Glu Phe Leu Ser Gln Tyr Tyr Leu
35 40 45

Asn Asp Asn Asp Ala Phe Met Thr Ser Asp Val Gly Gly Pro Ile Glu
50 55 60

Asp Gln Asn Ser Leu Ser Ala Gly Glu Arg Gly Pro Thr Leu Leu Glu
65 70 75 80

Asp Phe Ile Phe Arg Gln Lys Ile Gln Arg Phe Asp His Glu Arg Val
85 90 95

Pro Glu Arg Ala Val His Ala Arg Gly Ala Gly Ala His Gly Val Phe
100 105 110

Thr Ser Tyr Gly Asp Phe Ser Asn Ile Thr Ala Ala Ser Phe Leu Ala
115 120 125

Lys Glu Gly Lys Gln Thr Pro Val Phe Val Arg Phe Ser Thr Val Ala
130 135 140

Gly Ser Arg Gly Ser Ser Asp Leu Ala Arg Asp Val His Gly Phe Ala
145 150 155 160

Thr Arg Phe Tyr Thr Asp Glu Gly Asn Phe Asp Ile Val Gly Asn Asn

165 170 175

Ile Pro Val Phe Phe Ile Gln Asp Ala Ile Leu Phe Pro Asp Leu Ile
180 185 190

His Ala Val Lys Pro Arg Gly Asp Asn Glu Ile Pro Gln Ala Ala Thr
195 200 205

Ala His Asp Ser Ala Trp Asp Phe Phe Ser Gln Gln Pro Ser Thr Met
210 215 220

His Thr Leu Leu Trp Ala Met Ser Gly His Gly Ile Pro Arg Ser Phe
225 230 235 240

Arg His Val Asp Gly Phe Gly Val His Thr Phe Arg Phe Val Thr Asp
245 250 255

Asp Gly Ala Ser Lys Leu Val Lys Phe His Trp Lys Ser Leu Gln Gly
260 265 270

Lys Ala Ser Met Val Trp Glu Glu Ala Gln Gln Thr Ser Gly Lys Asn
275 280 285

Pro Asp Phe Met Arg Gln Asp Leu His Asp Ala Ile Glu Ala Gly Arg
290 295 300

Tyr Pro Glu Trp Glu Leu Gly Val Gln Ile Met Asp Glu Glu Asp Gln
305 310 315 320

Leu Arg Phe Gly Phe Asp Leu Leu Asp Pro Thr Lys Ile Val Pro Glu
325 330 335

Glu Phe Val Pro Ile Thr Lys Leu Gly Lys Met Gln Leu Asn Arg Asn
340 345 350

Pro Arg Asn Tyr Phe Ala Glu Thr Glu Gln Val Met Phe Gln Pro Gly
355 360 365

His Ile Val Arg Gly Val Asp Phe Thr Glu Asp Pro Leu Leu Gln Gly
370 375 380

Arg Leu Phe Ser Tyr Leu Asp Thr Gln Leu Asn Arg His Gly Gly Pro
385 390 395 400

Asn Phe Glu Gln Leu Pro Ile Asn Gln Pro Arg Val Pro Val His Asn
405 410 415

Asn Asn Arg Asp Gly Ala Gly Gln Met Phe Ile Pro Leu Asn Pro His
420 425 430

Ala Tyr Ser Pro Lys Thr Ser Val Asn Gly Ser Pro Lys Gln Ala Asn
435 440 445

Gln Thr Val Gly Asp Gly Phe Phe Thr Ala Pro Gly Arg Thr Thr Ser
450 455 460

Gly Lys Leu Val Arg Ala Val Ser Ser Ser Phe Glu Asp Val Trp Ser
465 470 475 480

Gln Pro Arg Leu Phe Tyr Asn Ser Leu Val Pro Ala Glu Lys Gln Phe
485 490 495

Val Ile Asp Ala Ile Arg Phe Glu Asn Ala Asn Val Lys Ser Pro Val
500 505 510

Val Lys Asn Asn Val Ile Ile Gln Leu Asn Arg Ile Asp Asn Asp Leu
515 520 525

Ala Arg Arg Val Ala Arg Ala Ile Gly Val Ala Glu Pro Glu Pro Asp
530 535 540

Pro Thr Phe Tyr His Asn Asn Lys Thr Ala Asp Val Gly Thr Phe Gly
545 550 555 560

Thr Lys Leu Lys Lys Leu Asp Gly Leu Lys Val Gly Val Leu Gly Ser
565 570 575

Val Gln His Pro Gly Ser Val Glu Gly Ala Ser Thr Leu Arg Asp Arg
580 585 590

Leu Lys Asp Asp Gly Val Asp Val Val Leu Val Ala Glu Arg Leu Ala
595 600 605

Asp Gly Val Asp Gln Thr Tyr Ser Thr Ser Asp Ala Ile Gln Phe Asp
610 615 620

Ala Val Val Val Ala Ala Gly Ala Glu Ser Leu Phe Ala Ala Ser Ser
625 630 635 640

Phe Thr Gly Gly Ser Ala Asn Ser Ala Ser Gly Ala Ser Ser Leu Tyr
645 650 655

Pro Thr Gly Arg Pro Leu Gln Ile Leu Ile Asp Gly Phe Arg Phe Gly
660 665 670

Lys Thr Val Gly Ala Leu Gly Ser Gly Thr Ala Ala Leu Arg Asn Ala
675 680 685

Gly Ile Ala Thr Ser Arg Asp Gly Val Tyr Val Ala Gln Ser Val Thr
690 695 700

Asp Asp Phe Ala Asn Asp Leu Lys Glu Gly Leu Arg Thr Phe Lys Phe
705 710 715 720

Leu Asp Arg Phe Pro Val Asp His
725

<210> 6

<211> 749

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:6 - catalase A)

<400> 6

Met Ala Thr Lys Ile Ala Gly Gly Leu His Arg Ala Gln Glu Val Leu
1 5 10 15

Gln Asn Thr Ser Ser Lys Ser Lys Lys Leu Val Asp Leu Glu Arg Asp
20 25 30

Thr Ala Asp Ala His Thr Gln Gln Pro Leu Thr Thr Asp His Gly Val
35 40 45

Arg Val Ser Asn Thr Asp Gln Trp Leu Arg Val Thr Asn Asp Arg Arg
50 55 60

Thr Gly Pro Ser Leu Leu Glu Asp Gln Ile Ala Arg Glu Lys Ile His
65 70 75 80

Arg Phe Asp His Glu Arg Ile Pro Glu Arg Val Val His Ala Arg Gly
85 90 95

Thr Gly Ala Phe Gly Asn Phe Lys Leu Lys Glu Ser Ile Glu Asp Leu
100 105 110

Thr Tyr Ala Gly Val Leu Thr Asp Thr Ser Arg Asn Thr Pro Val Phe
115 120 125

Val Arg Phe Ser Thr Val Gln Gly Ser Arg Gly Ser Ala Asp Thr Val
130 135 140

Arg Asp Val Arg Gly Phe Ala Val Lys Phe Tyr Thr Asp Glu Gly Asn
145 150 155 160

Trp Asp Ile Val Gly Asn Asn Ile Pro Val Phe Phe Ile Gln Asp Ala
165 170 175

Val Lys Phe Pro Asp Phe Val His Ala Val Lys Pro Glu Pro His Asn
180 185 190

Glu Val Pro Gln Ala Gln Thr Ala His Asn Asn Phe Trp Asp Phe Val
195 200 205

Tyr Leu His Pro Glu Ala Thr His Met Phe Met Trp Ala Met Ser Asp
210 215 220

Arg Ala Ile Pro Arg Ser Tyr Arg Met Met Gln Gly Phe Gly Val Asn
225 230 235 240

Thr Phe Ala Leu Val Asn Lys Glu Gly Lys Arg His Phe Val Lys Phe
245 250 255

His Trp Ile Pro His Leu Gly Val His Ser Leu Val Trp Asp Glu Ala
260 265 270

Leu Lys Leu Gly Gly Gln Asp Pro Asp Phe His Arg Lys Asp Leu Met
275 280 285

Glu Ala Ile Asp Asn Lys Ala Tyr Pro Lys Trp Asp Phe Ala Ile Gln
290 295 300

Val Ile Pro Glu Glu Lys Gln Asp Asp Phe Glu Phe Asp Ile Leu Asp
305 310 315 320

Ala Thr Lys Ile Trp Pro Glu Asn Leu Val Pro Leu Arg Val Ile Gly

325 330 335

Glu Leu Glu Leu Asn Arg Asn Val Asp Glu Phe Phe Pro Gln Thr Glu
340 345 350

Gln Val Ala Phe Cys Thr Ser His Ile Val Pro Gly Ile Asp Phe Thr
355 360 365

Asp Asp Pro Leu Leu Gln Gly Arg Asn Phe Ser Tyr Phe Asp Thr Gln
370 375 380

Ile Ser Arg Leu Gly Ile Asn Trp Glu Glu Leu Pro Ile Asn Arg Pro
385 390 395 400

Val Cys Pro Val Leu Asn His Asn Arg Asp Gly Gln Met Arg His Arg
405 410 415

Ile Thr Gln Gly Thr Val Asn Tyr Trp Pro Asn Arg Phe Glu Ala Val
420 425 430

Pro Pro Thr Gly Thr Lys Gly Ser Gly Val Gly Gly Gly Phe Thr Thr
435 440 445

Tyr Pro Gln Arg Val Glu Gly Ile Lys Asn Arg Ala Leu Asn Asp Lys
450 455 460

Phe Arg Glu His His Asn Gln Ala Gln Leu Phe Tyr Asn Ser Met Ser
465 470 475 480

Glu His Glu Lys Leu His Met Lys Lys Ala Phe Ser Phe Glu Leu Asp
485 490 495

His Cys Asp Asp Pro Thr Val Tyr Glu Arg Leu Ala Gly His Arg Leu
500 505 510

Ala Glu Ile Asp Leu Glu Leu Ala Gln Lys Val Ala Glu Met Val Gly
515 520 525

Ala Pro Ile Pro Ala Lys Ala Leu Lys Gln Asn His Gly Arg Arg Ala
530 535 540

Pro His Leu Ser Gln Thr Glu Phe Ile Pro Lys Asn Pro Thr Ile Ala
545 550 555 560

Ser Arg Arg Ile Ala Ile Ile Ile Gly Asp Gly Tyr Asp Pro Val Ala
565 570 575

Ser Thr Gly Leu Lys Thr Ala Ile Lys Ala Ala Ser Ala Leu Pro Phe
580 585 590

Ile Ile Gly Thr Lys Arg Ser Ala Ile Tyr Ala Thr Glu Asp Lys Thr
595 600 605

Ser Ser Lys Gly Ile Ile Pro Asp His His Tyr Asp Gly Gln Arg Ser
610 615 620

Thr Met Phe Asp Ala Thr Phe Ile Pro Gly Gly Pro His Val Ala Thr
625 630 635 640

Leu Arg Gln Asn Gly Gln Ile Lys Tyr Trp Ile Ser Glu Thr Phe Gly
645 650 655

His Leu Lys Ala Leu Gly Ala Thr Gly Glu Ala Val Asp Leu Val Lys
660 665 670

Glu Thr Leu Ser Gly Thr Leu His Val Gln Val Ala Ser Ser Gln Ser
675 680 685

Pro Glu Pro Val Glu Trp Tyr Gly Val Val Thr Ala Gly Gly Lys Gln
690 695 700

Lys Pro Glu Ser Phe Lys Glu Ser Val Gln Ile Leu Lys Gly Ala Thr
705 710 715 720

Asp Phe Val Gly Lys Phe Phe Tyr Gln Ile Ser Gln His Arg Asn Tyr
725 730 735

Gln Arg Glu Leu Asp Gly Leu Ala Ser Thr Ile Ala Phe
740 745

<210> 7

<211> 16

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:7- CssI fragment)

<400> 7

Lys Val Ala Gln Glu Ile Ile Asn Pro Gly Pro Lys Val Val Thr Thr
1 5 10 15

<210> 8

<211> 16

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:8 - CssI fragment)

<400> 8

Lys Glu Gly Ala Glu Gln Ser Ala Pro Gln Ala Glu His Ser Thr Lys
1 5 10 15

<210> 9

<211> 17

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:9 - hydrophobin fragment)

<400> 9

Pro Val Pro Asp Asp Ile Thr Val Lys Gln Ala Thr Glu Lys Cys Gly
1 5 10 15

Asp

<210> 10

<211> 15

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:10 - hydrophobin fragment)

<400> 10

Ala Thr Tyr Ala Gly Asp Val Thr Asp Ile Asp Glu Gly Ile Leu
1 5 10 15

<210> 11

<211> 16

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:11 - GAPDH-B fragment)

<400> 11

Thr Glu Asp Asp Val Val Ser Ser Asp Leu Asn Gly Asp Glu Arg Ser
1 5 10 15

<210> 12

<211> 18

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:12 - GAPDH-B fragment)

<400> 12

Phe Lys Gly Thr Ile Glu Thr Tyr Asp Gln Gly Leu Ile Val Asn Gly
1 5 10 15

Lys Lys

<210> 13

<211> 17

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:13 - enolase fragment)

<400> 13

Lys Asn Val Asn Glu Thr Ile Gly Pro Ala Leu Ile Lys Glu Asn Ile
1 5 10 15

Asp

<210> 14

<211> 18

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:14 - enolase fragment)

<400> 14

Thr Ser Asp Phe Gln Ile Val Gly Asp Asp Leu Thr Val Thr Asn Pro
1 5 10 15

Gly Arg

<210> 15

<211> 20

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:15 - catalase B fragment)

<400> 15

Asp Glu Glu Asp Gln Leu Arg Phe Gly Phe Asp Leu Leu Asp Pro Thr
1 5 10 15

Lys Ile Val Pro
20

<210> 16

<211> 16

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:16 - catalase B fragment)

<400> 16

Arg Ile Asp Asn Asp Leu Ala Arg Arg Val Ala Arg Ala Ile Gly Val
1 5 10 15

<210> 17

<211> 12

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:17 - CssI fragment)

<400> 17

Lys Val Ala Gln Glu Ile Ile Asn Pro Gly Pro Lys
1 5 10

<210> 18

<211> 10

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:18 - hydrophobin fragment)

<400> 18

Phe Pro Val Pro Asp Asp Ile Thr Val Lys
1 5 10

<210> 19

<211> 20

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:19 - hydrophobin fragment)

<400> 19

Ala Thr Tyr Ala Gly Asp Val Thr Asp Ile Asp Glu Gly Ile Leu Ala
1 5 10 15

Gly Thr Leu Lys
20

<210> 20

<211> 11

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:20 - GAPDH-B fragment)

<400> 20

Ala Gly Ile Ser Leu Asn Pro Asn Phe Val Lys

1 5 10

<210> 21

<211> 15

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:21 - GAPDH-B fragment)

<400> 21

Thr Ala Ala Gln Asn Ile Ile Pro Ser Ser Thr Gly Ala Ala Lys
1 5 10 15

<210> 22

<211> 20

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:22 - a GAPDH-B fragment)

<400> 22

Asn Ile Leu Gly Tyr Thr Glu Asp Asp Val Val Ser Ser Asp Leu Asn
1 5 10 15

Gly Asp Glu Arg
20

<210> 23

<211> 12

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:23 - enolase fragment)

<400> 23

Asn Val Asn Glu Thr Ile Gly Pro Ala Leu Ile Lys
1 5 10

<210> 24

<211> 15

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:24 - enolase fragment)

<400> 24

Val Asn Gln Ile Gly Thr Leu Thr Glu Ser Ile Gln Ala Ala Lys
1 5 10 15

<210> 25

<211> 12

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:25 - enolase fragment)

<400> 25

Trp Leu Thr Tyr Glu Gln Leu Ala Asp Leu Tyr Lys
1 5 10

<210> 26

<211> 11

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:26 - CssI fragment)

<400> 26

Val Ala Gln Glu Ile Ile Asn Pro Gly Pro Lys
1 5 10

<210> 27

<211> 10

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:27 - catalase B fragment)

<400> 27

Phe Gly Phe Asp Leu Leu Asp Pro Thr Lys
1 5 10

<210> 28

<211> 9

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:28 - CssI fragment)

<400> 28

Ser Ile Ser Phe Gln Leu Asp Cys Arg
1 5

<210> 29

<211> 15

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:29 - CssI fragment)

<400> 29

Glu Gly Ala Glu Gln Ser Ala Pro Gln Ala Glu His Ser Thr Lys
1 5 10 15

<210> 30

<211> 12

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:30 - CssI fragment)

<400> 30

Val Val Thr Thr Pro Tyr Thr Cys Asp Gln Val Lys
1 5 10

<210> 31

<211> 14

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:31 - GAPDH-B fragment)

<400> 31

Val Pro Thr Ser Asn Val Ser Val Val Asp Leu Thr Cys Arg
1 5 10

<210> 32

<211> 9

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:32 - GAPDH-B fragment)

<400> 32

Tyr Asp Thr Thr His Gly Gln Phe Lys
1 5

<210> 33

<211> 15

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:33 - GAPDH-B fragment)

<400> 33

Gly Thr Ile Glu Thr Tyr Asp Gln Gly Leu Ile Val Asn Gly Lys
1 5 10 15

<210> 34

<211> 12

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:34 - catalase A fragment)

<400> 34

Thr Gly Pro Ser Leu Leu Glu Asp Gln Ile Ala Arg
1 5 10

<210> 35

<211> 172

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:35 - GAPDH-B fragment)

<400> 35

Ser Asn Ala Ser Cys Thr Thr Asn Cys Leu Ala Pro Leu Ala Lys Val
1 5 10 15

Ile Asn Asp Lys Phe Gly Ile Val Glu Gly Leu Met Thr Thr Val His
20 25 30

Ser Tyr Thr Ala Thr Gln Lys Val Val Asp Ala Pro Ser Asn Lys Asp
35 40 45

Trp Arg Gly Gly Arg Thr Ala Ala Gln Asn Ile Ile Pro Ser Ser Thr
50 55 60

Gly Ala Ala Lys Ala Val Gly Lys Val Ile Pro Ser Leu Asn Gly Lys
65 70 75 80

Leu Thr Gly Met Ala Met Arg Val Pro Thr Ser Asn Val Ser Val Val
85 90 95

Asp Leu Thr Cys Arg Leu Glu Lys Gly Ala Ser Tyr Asp Glu Ile Lys
100 105 110

Gln Ala Ile Lys Ala Ala Ser Glu Glu Gly Glu Leu Lys Asn Ile Leu
115 120 125

Gly Tyr Thr Glu Asp Asp Val Val Ser Ser Asp Leu Asn Gly Asp Glu
130 135 140

Arg Ser Ser Ile Phe Asp Ala Lys Ala Gly Ile Ser Leu Asn Pro Asn
145 150 155 160

Phe Val Lys Leu Val Ala Trp Tyr Asp Asn Glu Trp
165 170

<210> 36

<211> 368

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:36 - IMDH B)

<220>

<221> MISC_FEATURE

<222> (176)..(176)

<223> the amino acid at position 176 is Ala or Ser

<220>

<221> MISC_FEATURE

<222> (179)..(179)

<223> the amino acid at position 179 is Leu or Ile

<400> 36

Met Val Thr Thr Tyr Asn Ile Leu Val Leu Pro Gly Asp Gly Ile Gly
1 5 10 15

Pro Glu Val Met Thr Glu Ala Val Lys Val Leu Lys Val Phe Glu Asn
20 25 30

Glu His Arg Lys Phe Asn Leu Arg Gln Glu Leu Ile Gly Gly Cys Ser
35 40 45

Ile Asp Ala His Gly Lys Ser Val Thr Glu Glu Val Lys Lys Ala Ala
50 55 60

Leu Glu Ser Asp Ala Val Leu Phe Ala Ala Val Gly Gly Pro Lys Trp
65 70 75 80

Asp His Ile Arg Arg Gly Leu Asp Gly Pro Glu Gly Gly Leu Leu Gln
85 90 95

Leu Arg Lys Ala Met Asp Ile Tyr Ala Asn Leu Arg Pro Cys Ser Ala
100 105 110

Ser Ser Pro Ser Ala Ser Ile Ala Lys Glu Phe Ser Pro Phe Arg Gln
115 120 125

Glu Val Ile Glu Gly Val Asp Phe Val Val Val Arg Glu Asn Cys Gly

130 135 140

Gly Ala Tyr Phe Gly Lys Lys Ile Glu Glu Glu Asp Tyr Ala Met Asp
145 150 155 160

Glu Trp Gly Tyr Ser Glu Arg Glu Ile Gln Arg Ile Thr Arg Leu Xaa
165 170 175

Ala Glu Xaa Ala Leu Arg His Asn Pro Pro Trp Pro Val Ile Ser Leu
180 185 190

Asp Lys Ala Asn Val Leu Ala Ser Ser Arg Leu Trp Arg Arg Val Val
195 200 205

Glu Lys Thr Met Thr Thr Glu Tyr Pro Gln Val Lys Leu Val His Gln
210 215 220

Leu Ala Asp Ser Ala Ser Leu Ile Leu Ala Thr Asn Pro Arg Ala Leu
225 230 235 240

Asn Gly Val Ile Leu Ala Asp Asn Thr Phe Gly Asp Met Ile Ser Asp
245 250 255

Gln Ala Gly Ser Ile Val Gly Thr Leu Gly Val Leu Pro Ser Ala Ser
260 265 270

Leu Asp Gly Leu Pro Ser Glu Thr Arg Lys Arg Thr Asn Gly Leu Tyr
275 280 285

Glu Pro Thr His Gly Ser Ala Pro Thr Ile Ala Gly Gln Asn Ile Ala
290 295 300

Asn Pro Val Ala Met Ile Leu Cys Val Ala Leu Met Phe Arg Tyr Ser
305 310 315 320

Leu Asp Met Glu Thr Glu Ala Gln Arg Ile Glu Lys Ala Val Gln Gly
325 330 335

Val Leu Asp Ala Gly Ile Arg Thr Pro Asp Leu Gly Gly Lys Ser Gly
340 345 350

Thr Asn Glu Val Gly Asp Ala Ile Val Ala Ala Leu Gln Gly Ser Ser
355 360 365

<210> 37

<211> 8

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:37 - IMDH B fragment)

<220>

<221> MISC_FEATURE

<222> (2)..(2)

<223> the amino acid at position 2 is Ala or Ser

<220>

<221> MISC_FEATURE

<222> (5)..(5)

<223> the amino acid at position 5 is Leu or Ile

<400> 37

Leu Xaa Ala Glu Xaa Ala Leu Arg
1 5

<210> 38

<211> 1226

<212> DNA

<213> Aspergillus fumigatus (SEQ ID NO:38 - IMDH B incl introns)

<220>

<221> misc_feature

<222> (579)..(581)

<223> 579+580+581 enccode an Alanine or a Serine

<220>

<221> misc_feature

<222> (588)..(590)

<223> 588+589+590 enccode a Leucine or an Isoleucine

<400> 38

atggtaacta cttacaacat cctcgtcctc cccggcgatg ggatcggtcc cgaggtcatg 60

accgaagcgg tcaaggtgct aaaggtcttt gagaacgagc accgaaagtt caacctccgg 120

caagagctca tcggcggttg cagcatcgat gcgcacggaa aatccgtcac agaagaagtg 180

aaaaaggccg ctctggaatc cgacgccgtg ctcttcgcag cagtcggagg tcccaaatgg 240

gaccatatcc gtcgtggtct tgacgggccg gagggaggcc tgctgcagct ccgcaaggcg 300

atggacatct acgcgaatct caggccgtgc tcggccagtt cgccgagtgc gtcgatcgcg 360

aaggagttta gcccattccg ccaggaagtg atcgagggcg tagatttcgt cgtggtgagg 420

gagaactgcg ggggagcgta tttcgggaag aagatcgaag aagaagatta tggtacgtcg 480

tttttaacaa gcagtatgct ttcgagactg actgtgttat ttcagcgatg gacgaatggg 540

gctatagcga gcgcgagatc cagcgcatca cccgcctcnn ngcggaannn gccctccgtc 600

acaacccccc ctggcccgtc atctccctgg acaaagccaa tgtgctcgcc tcgtcgcggc 660

tctggcggcg cgtcgttgaa aagaccatga ccactgagta tccccaggtg aagctcgtgc 720

accagctggc agactcagca tcgctgattc tagcgaccaa cccgcgggca ttgaacggtg 780

tcatcttggc tgacaacaca ttcggcgaca tgatttctga ccaggccggt tccatcgtcg 840

ggacattggg cgtgcttccc agtgccagtc tcgatggact acccagtgaa acaagaaagc 900

ggacaaatgg tctgtacgag ccgacccatg gatctgcacc gacgtacgtt tcttcctttg 960

ttacccgaat tatcatgttt cactgaagca agctgacaat catctgcaga attgcgggcc 1020

agaacatcgc caaccccgtt gccatgatcc tctgtgtggc tctcatgttc cgctattcgc 1080

tagacatgga gaccgaggcg caacggatcg aaaaagcagt gcagggtgtt cttgatgccg 1140

ggatccgcac ccctgatctg ggtgggaaat cggggacgaa tgaagttggg gatgcaattg 1200

ttgctgcgtt gcagggtagt tcataa 1226

<210> 39

<211> 1107

<212> DNA

<213> Aspergillus fumigatus (SEQ ID NO:39 - IMDH B coding)

<220>

<221> misc_feature

<222> (526)..(528)

<223> 527+527+528 encode an Alanine or a Serine

<220>

<221> misc_feature

<222> (535)..(537)

<223> 535+536+537 encode a Leucine or an Isoleucine

<400> 39

atggtaacta cttacaacat cctcgtcctc cccggcgatg ggatcggtcc cgaggtcatg 60

accgaagcgg tcaaggtgct aaaggtcttt gagaacgagc accgaaagtt caacctccgg 120

caagagctca tcggcggttg cagcatcgat gcgcacggaa aatccgtcac agaagaagtg 180

aaaaaggccg ctctggaatc cgacgccgtg ctcttcgcag cagtcggagg tcccaaatgg 240

gaccatatcc gtcgtggtct tgacgggccg gagggaggcc tgctgcagct ccgcaaggcg 300

atggacatct acgcgaatct caggccgtgc tcggccagtt cgccgagtgc gtcgatcgcg 360

aaggagttta gcccattccg ccaggaagtg atcgagggcg tagatttcgt cgtggtgagg 420

gagaactgcg ggggagcgta tttcgggaag aagatcgaag aagaagatta tgcgatggac 480

gaatggggct atagcgagcg cgagatccag cgcatcaccc gcctcnnngc ggaannngcc 540

ctccgtcaca acccccccctg gcccgtcatc tccctggaca aagccaatgt gctcgcctcg 600

tcgcggctct ggcggcgcgt cgttgaaaag accatgacca ctgagtatcc ccaggtgaag 660

ctcgtgcacc agctggcaga ctcagcatcg ctgattctag cgaccaaccc gcgggcattg 720

aacggtgtca tcttggctga caacacattc ggcgacatga tttctgacca ggccggttcc 780

atcgtcggga cattgggcgt gcttcccagt gccagtctcg atggactacc cagtgaaaca 840

agaaagcgga caaatggtct gtacgagccg acccatggat ctgcaccgac gattgcgggc 900

cagaacatcg ccaaccccgt tgccatgatc ctctgtgtgg ctctcatgtt ccgctattcg 960

ctagacatgg agaccgaggc gcaacggatc gaaaaagcag tgcagggtgt tcttgatgcc 1020

gggatccgca cccctgatct gggtgggaaa tcggggacga atgaagttgg ggatgcaatt 1080

gttgctgcgt tgcagggtag ttcataa 1107

<210> 40

<211> 1093

<212> DNA

<213> Aspergillus fumigatus (SEQ ID NO:40 - IMDH B 2 - predicted ORF)

<400> 40

atgccgtcat ataacattgt cgttttcgct ggggaccact gtggtccgga ggtaagttcg 60

gtcctgcgcg tcatcgagaa gtgccgtgac gatgctacct tcaacctcca ggatcaattg 120

ctcggtggtg taagttcgat cgatgctacc ggatctcccc ttaccgacga agctcttaac 180

gccgcaaaga acgccgatgc cgttctcctc ggtgccattg gcggtcccaa atggggcact 240

ggcgccgtcc gccccgaaca gggcctcctc cgtctgcgca aggagatggg cacattcggt 300

aacctccgcc cctgcaactt cgccgccccg tcgctggtcg acggctcccc tctccgcccc 360

gaagtctgcc gcggcgtcga cttcaacatt atccgcgaac tgaccggtgg catctacttc 420

ggcgaccgca aggaggacga cggcagcggc ttcgccatgg acacggagcc gtactcccgc 480

gcggagatcg agcgcatcac ccgccttgcg gcccacctcg ctctgcagca caacccccct 540

cttcccgtgt ggagcttgga caaggccaac gtcctcgcga cgagccggct gtggcggaag 600

accgtgacgg aggtcatggc caaggagttc ccccagctca aggtggagca ccagctcatt 660

gactccgcgg ccatgatcat ggtcaaggag cctagaaagc ttaacggtat tgttgtcact 720

agcaacctgt tcggtgacat catcagtgat gaagccagcg ttatccctgg ttctctggga 780

ctcttgccca gcgcaagctt gagcggcatt cctgacggaa agaccaaggt caatggtatc 840

tatgagccta ttcacggttc tgcccctgac attgccggca agggcatcgt taaccccgtc 900

gccgccattc tctctgtcgc catgatgatg cagtactccc tgaaccgtat ggatgacgcc 960

agggccatcg agacggccgt ccgcaatgtg atcgaggccg gtatccgcac tgccgatatt 1020

ggcggcaagt cgacaactag cgaggtcggt gacgctgttg ctgccgagct ggagaagctg 1080

ttgaagcaat agt 1093

<210> 41

<211> 363

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:41 - IMDH B 2 - aa)

<400> 41

Met Pro Ser Tyr Asn Ile Val Val Phe Ala Gly Asp His Cys Gly Pro
1 5 10 15

Glu Val Ser Ser Val Leu Arg Val Ile Glu Lys Cys Arg Asp Asp Ala
20 25 30

Thr Phe Asn Leu Gln Asp Gln Leu Leu Gly Gly Val Ser Ser Ile Asp
35 40 45

Ala Thr Gly Ser Pro Leu Thr Asp Glu Ala Leu Asn Ala Ala Lys Asn
50 55 60

Ala Asp Ala Val Leu Leu Gly Ala Ile Gly Gly Pro Lys Trp Gly Thr
65 70 75 80

Gly Ala Val Arg Pro Glu Gln Gly Leu Leu Arg Leu Arg Lys Glu Met
85 90 95

Gly Thr Phe Gly Asn Leu Arg Pro Cys Asn Phe Ala Ala Pro Ser Leu
100 105 110

Val Asp Gly Ser Pro Leu Arg Pro Glu Val Cys Arg Gly Val Asp Phe
115 120 125

Asn Ile Ile Arg Glu Leu Thr Gly Gly Ile Tyr Phe Gly Asp Arg Lys
130 135 140

Glu Asp Asp Gly Ser Gly Phe Ala Met Asp Thr Glu Pro Tyr Ser Arg
145 150 155 160

Ala Glu Ile Glu Arg Ile Thr Arg Leu Ala Ala His Leu Ala Leu Gln
165 170 175

His Asn Pro Pro Leu Pro Val Trp Ser Leu Asp Lys Ala Asn Val Leu
180 185 190

Ala Thr Ser Arg Leu Trp Arg Lys Thr Val Thr Glu Val Met Ala Lys
195 200 205

Glu Phe Pro Gln Leu Lys Val Glu His Gln Leu Ile Asp Ser Ala Ala
210 215 220

Met Ile Met Val Lys Glu Pro Arg Lys Leu Asn Gly Ile Val Val Thr
225 230 235 240

Ser Asn Leu Phe Gly Asp Ile Ile Ser Asp Glu Ala Ser Val Ile Pro
245 250 255

Gly Ser Leu Gly Leu Leu Pro Ser Ala Ser Leu Ser Gly Ile Pro Asp
260 265 270

Gly Lys Thr Lys Val Asn Gly Ile Tyr Glu Pro Ile His Gly Ser Ala
275 280 285

Pro Asp Ile Ala Gly Lys Gly Ile Val Asn Pro Val Ala Ala Ile Leu
290 295 300

Ser Val Ala Met Met Met Gln Tyr Ser Leu Asn Arg Met Asp Asp Ala
305 310 315 320

Arg Ala Ile Glu Thr Ala Val Arg Asn Val Ile Glu Ala Gly Ile Arg
325 330 335

Thr Ala Asp Ile Gly Gly Lys Ser Thr Thr Ser Glu Val Gly Asp Ala
340 345 350

Val Ala Ala Glu Leu Glu Lys Leu Leu Lys Gln
355 360

<210> 42

<211> 18

<212> DNA

<213> Aspergillus fumigatus (SEQ ID NO:42 - enolase primer)

<400> 42
atgcctatct ccaagatc 18

<210> 43

<211> 15

<212> DNA

<213> Aspergillus fumigatus (SEQ ID NO:43 - enolase primer)

<400> 43
caggttgacg gcagt 15

<210> 44

<211> 18

<212> DNA

<213> Aspergillus fumigatus (SEQ ID NO:44 - IMDH B primer)

<400> 44
atggtaacta cttacaac 18

<210> 45

<211> 18

<212> DNA

<213> Aspergillus fumigatus (SEQ ID NO:45 - IMDH B primer)

<400> 45
tgaactaccc tgcaacgc 18

<210> 46

<211> 1233

<212> DNA

<213> Aspergillus fumigatus (SEQ ID NO:46 - IMDH B insert in pBAD)

<400> 46
atgggttctg gatccggtga tgacgatgac aagctcgccc ttatggtaac tacttacaac 60

atcctcgtcc tccccggcga tgggatcggt cccgaggtca tgaccgaagc ggtcaaggtg 120

ctaaaggtct ttgagaacga gcaccgaaag ttcaacctcc ggcaagagct catcggcggt 180

tgcagcatcg atgcgcacgg aaaatccgtc acagaagaag tgaaaaaggc cgctctggaa 240

tccgacgccg tgctcttcgc agcagtcgga ggtcccaaat gggaccatat ccgtcgtggt 300

cttgacgggc cggagggagg cctgctgcag ctccgcaagg cgatggacat ctacgcgaat 360

ctcaggccgt gctcggccag ttcgccgagt gcgtcgatcg cgaaggagtt tagcccattc 420

cgccaggaag tgatcgaggg cgtagatttc gtcgtggtga gggagaactg cgggggagcg 480

tatttcggga agaagatcga agaagaagat tatgcgatgg acgaatgggg ctatagcgag 540

cgcgagatcc agcgcatcac ccgcctctcg gcggaaattg ccctccgtca caacccccc 600

tggcccgtca tctccctgga caaagccaat gtgctcgcct cgtcgcggct ctggcggcgc 660

gtcgttgaaa agaccatgac cactgagtat ccccaggtga agctcgtgca ccagctggca 720

gactcagcat cgctgattct agcgaccaac ccgcgggcat tgaacggtgt catcttggct 780

gacaacacat tcggcgacat gatttctgac caggccggtt ccatcgtcgg gacattgggc 840

gtgcttccca gtgccagtct cgatggacta cccagtgaaa caagaaagcg gacaaatggt 900

ctgtacgagc cgacccatgg atctgcaccg acaattgcgg gccagaacat cgccaacccc 960

gttgccatga tcctctgtgt ggctctcatg ttccgctatt cgctagacat ggagaccgag 1020

gcgcaacgga tcgaaaaagc agtgcagggt gttcttgatg ccgggatccg cacccctgat 1080

ctgggtggga aatcggggac gaatgaagtt ggggatgcaa ttgttgctgc gttgcagggt 1140

agttcaaagg gcgagcttga aggtaagcct atccctaacc ctctcctcgg tctcgattct 1200

acgcgtaccg gtcatcatca ccatcaccat tga 1233

<210> 47

<211> 410

<212> PRT

<213> Aspergillus fumigatus (SEQ ID NO:47 - IMDH B insert in pBAD)

<400> 47

Met Gly Ser Gly Ser Gly Asp Asp Asp Asp Lys Leu Ala Leu Met Val
1 5 10 15

Thr Thr Tyr Asn Ile Leu Val Leu Pro Gly Asp Gly Ile Gly Pro Glu
20 25 30

Val Met Thr Glu Ala Val Lys Val Leu Lys Val Phe Glu Asn Glu His
35 40 45

Arg Lys Phe Asn Leu Arg Gln Glu Leu Ile Gly Gly Cys Ser Ile Asp
50 55 60

Ala His Gly Lys Ser Val Thr Glu Glu Val Lys Lys Ala Ala Leu Glu
65 70 75 80

Ser Asp Ala Val Leu Phe Ala Ala Val Gly Gly Pro Lys Trp Asp His
85 90 95

Ile Arg Arg Gly Leu Asp Gly Pro Glu Gly Gly Leu Leu Gln Leu Arg
100 105 110

Lys Ala Met Asp Ile Tyr Ala Asn Leu Arg Pro Cys Ser Ala Ser Ser
115 120 125

Pro Ser Ala Ser Ile Ala Lys Glu Phe Ser Pro Phe Arg Gln Glu Val
130 135 140

Ile Glu Gly Val Asp Phe Val Val Val Arg Glu Asn Cys Gly Gly Ala
145 150 155 160

Tyr Phe Gly Lys Lys Ile Glu Glu Glu Asp Tyr Ala Met Asp Glu Trp
165 170 175

Gly Tyr Ser Glu Arg Glu Ile Gln Arg Ile Thr Arg Leu Ser Ala Glu
180 185 190

Ile Ala Leu Arg His Asn Pro Pro Trp Pro Val Ile Ser Leu Asp Lys
195 200 205

Ala Asn Val Leu Ala Ser Ser Arg Leu Trp Arg Arg Val Val Glu Lys
210 215 220

Thr Met Thr Thr Glu Tyr Pro Gln Val Lys Leu Val His Gln Leu Ala
225 230 235 240

Asp Ser Ala Ser Leu Ile Leu Ala Thr Asn Pro Arg Ala Leu Asn Gly
245 250 255

Val Ile Leu Ala Asp Asn Thr Phe Gly Asp Met Ile Ser Asp Gln Ala
260 265 270

Gly Ser Ile Val Gly Thr Leu Gly Val Leu Pro Ser Ala Ser Leu Asp
275 280 285

Gly Leu Pro Ser Glu Thr Arg Lys Arg Thr Asn Gly Leu Tyr Glu Pro

290 295 300

Thr His Gly Ser Ala Pro Thr Ile Ala Gly Gln Asn Ile Ala Asn Pro
305 310 315 320

Val Ala Met Ile Leu Cys Val Ala Leu Met Phe Arg Tyr Ser Leu Asp
325 330 335

Met Glu Thr Glu Ala Gln Arg Ile Glu Lys Ala Val Gln Gly Val Leu
340 345 350

Asp Ala Gly Ile Arg Thr Pro Asp Leu Gly Gly Lys Ser Gly Thr Asn
355 360 365

Glu Val Gly Asp Ala Ile Val Ala Ala Leu Gln Gly Ser Ser Lys Gly
370 375 380

Glu Leu Glu Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asp Ser
385 390 395 400

Thr Arg Thr Gly His His His His His His
405 410

<210> 48

<211> 1443

<212> DNA

<213> Aspergillus fumigatus (SEQ ID NO:48 - enolase insert in pBAD)

<400> 48
atgggctctg gatccggtga tgacgatgac aagctcgccc ttatgcctat ctccaagatc 60

cacgctcgtt ccgtgtacga ctctcgcggt aaccccaccg ttgaggtgga cgttgtcacc 120

gagaccggtt tgcaccgtgc tattgttcct tctggagctt ccaccggcca gcacgaggct 180

cacgagctcc gtgacggtga taagacccag tggggcggca agggtgtcct caaggctgtc 240

aagaatgtca acgagaccat tggccctgct ctcatcaagg agaacatcga tgtgaaggac 300

cagtctaagg tcgacgagtt ccttaacaag cttgacggga ctgccaacaa gtccaacctc 360

ggtgctaatg ccatcctcgg tgtcagcttg gctgttgcca aggctggtgc tgctgagaag 420

ggtgtccctc tctacgctca catctccgac cttgccggta ccaagaagcc ctatgtcctt 480

cccgttccct tccagaacgt cctgaacggc ggctctcacg ccggtggtcg cctcgctttc 540

caggagttca tgatcgtccc tgactccgct ccctctttct ccgaggccct ccgccagggt 600

gctgaggtct accagaagct caaggctctg gccaagaaga agtacggcca gtccgctggc 660

aacgttggtg acgagggtgg tgttgctccc gatattcaga ccgccgagga ggctctcgac 720

ctgatcaccg aggccatcga gcaggccggc tacaccggca agatcaagat cgctatggac 780

gttgcctcca gcgagttcta caaggccgac gtcaagaagt acgaccttga cttcaagaac 840

cccgagagcg acccctccaa gtggctcacc tacgagcagc ttgccgacct ctacaagtcc 900

cttgctgcca agtaccccat tgtcagcatt gaggaccct tcgctgagga tgattgggag 960

gcctggagct acttctacaa gacctccgac ttccagattg ttggtgatga cctgactgtt 1020

actaaccctg ggcgtatcaa gaaggccatc gagctcaagt cctgcaacgc cctcctgctc 1080

aaggtcaacc agatcggtac cctcaccgag tccatccagg ccgccaagga ctcctacgcc 1140

gacaactggg gtgtcatggt ctcccaccgc tctggtgaga ctgaggacgt caccattgcc 1200

gacattgctg tcggtctgcg ctctggccag atcaagaccg gtgctccttg ccgttccgag 1260

cgtctggcta agctgaacca gatcctccgt atcgaggagg agctcggcga gaatgccgtc 1320

tacgctggtt ccaagttccg cactgccgtc aacctgaagg gcgagcttga aggtaagcct 1380

atccctaacc ctctcctcgg tctcgattct acgcgtaccg gtcatcatca ccatcaccat 1440

tga 1443

<210> 49

<211> 480

<212> PRT

<213> Aspergillus fumigatus (enolase insert in pBAD)

<400> 49

Met Gly Ser Gly Ser Gly Asp Asp Asp Asp Lys Leu Ala Leu Met Pro
1 5 10 15

Ile Ser Lys Ile His Ala Arg Ser Val Tyr Asp Ser Arg Gly Asn Pro
20 25 30

Thr Val Glu Val Asp Val Val Thr Glu Thr Gly Leu His Arg Ala Ile
35 40 45

Val Pro Ser Gly Ala Ser Thr Gly Gln His Glu Ala His Glu Leu Arg

50 55 60

Asp Gly Asp Lys Thr Gln Trp Gly Gly Lys Gly Val Leu Lys Ala Val
65 70 75 80

Lys Asn Val Asn Glu Thr Ile Gly Pro Ala Leu Ile Lys Glu Asn Ile
85 90 95

Asp Val Lys Asp Gln Ser Lys Val Asp Glu Phe Leu Asn Lys Leu Asp
100 105 110

Gly Thr Ala Asn Lys Ser Asn Leu Gly Ala Asn Ala Ile Leu Gly Val
115 120 125

Ser Leu Ala Val Ala Lys Ala Gly Ala Ala Glu Lys Gly Val Pro Leu
130 135 140

Tyr Ala His Ile Ser Asp Leu Ala Gly Thr Lys Lys Pro Tyr Val Leu
145 150 155 160

Pro Val Pro Phe Gln Asn Val Leu Asn Gly Gly Ser His Ala Gly Gly
165 170 175

Arg Leu Ala Phe Gln Glu Phe Met Ile Val Pro Asp Ser Ala Pro Ser
180 185 190

Phe Ser Glu Ala Leu Arg Gln Gly Ala Glu Val Tyr Gln Lys Leu Lys
195 200 205

Ala Leu Ala Lys Lys Lys Tyr Gly Gln Ser Ala Gly Asn Val Gly Asp
210 215 220

Glu Gly Gly Val Ala Pro Asp Ile Gln Thr Ala Glu Glu Ala Leu Asp
225 230 235 240

Leu Ile Thr Glu Ala Ile Glu Gln Ala Gly Tyr Thr Gly Lys Ile Lys
245 250 255

Ile Ala Met Asp Val Ala Ser Ser Glu Phe Tyr Lys Ala Asp Val Lys
260 265 270

Lys Tyr Asp Leu Asp Phe Lys Asn Pro Glu Ser Asp Pro Ser Lys Trp
275 280 285

Leu Thr Tyr Glu Gln Leu Ala Asp Leu Tyr Lys Ser Leu Ala Ala Lys
290 295 300

Tyr Pro Ile Val Ser Ile Glu Asp Pro Phe Ala Glu Asp Asp Trp Glu
305 310 315 320

Ala Trp Ser Tyr Phe Tyr Lys Thr Ser Asp Phe Gln Ile Val Gly Asp
325 330 335

Asp Leu Thr Val Thr Asn Pro Gly Arg Ile Lys Lys Ala Ile Glu Leu
340 345 350

Lys Ser Cys Asn Ala Leu Leu Leu Lys Val Asn Gln Ile Gly Thr Leu
355 360 365

Thr Glu Ser Ile Gln Ala Ala Lys Asp Ser Tyr Ala Asp Asn Trp Gly
370 375 380

Val Met Val Ser His Arg Ser Gly Glu Thr Glu Asp Val Thr Ile Ala
385 390 395 400

Asp Ile Ala Val Gly Leu Arg Ser Gly Gln Ile Lys Thr Gly Ala Pro
405 410 415

Cys Arg Ser Glu Arg Leu Ala Lys Leu Asn Gln Ile Leu Arg Ile Glu
420 425 430

Glu Glu Leu Gly Glu Asn Ala Val Tyr Ala Gly Ser Lys Phe Arg Thr
435 440 445

Ala Val Asn Leu Lys Gly Glu Leu Glu Gly Lys Pro Ile Pro Asn Pro
450 455 460

Leu Leu Gly Leu Asp Ser Thr Arg Thr Gly His His His His His His
465 470 475 480

10

32